

WHAT IS CLAIMED IS:

1. A method of automatically determining a type of a memory applied in a computer system, wherein the computer system comprises a system power state signal, a voltage control circuit and at least one memory module slot to accommodate a memory,

5 the method comprising:

outputting a preset voltage to the memory;

performing an operation on the memory;

determining a type of the memory;

outputting a control signal;

10 outputting a voltage adjustment signal according to the control signal and the system power state signal; and

15 outputting a configured operation voltage to the memory according to the voltage adjustment signal.

2. The method according to claim 1, further comprising:

having the system power state signal entering a low logic state when the computer system enters a STD mode, a soft off mode or a mechanical power off mode; and

having the recognition apparatus receiving the system power state signal driving the voltage control circuit to output the preset voltage to the memory.

20 3. The method according to claim 1, further comprising operating the voltage control circuit according to a previous voltage adjustment signal without changing a previously provided configured operation voltage when the computer system enters a STR mode.

4. The method according to claim 1, wherein a processor executes a software program to perform the operation on the memory, to determine the type of the memory,

and to output the control signal.

5. The method according to claim 4, further comprising performing the operation on the memory with the software program, which software program then determines the type of the memory when the computer system enters a reset state.

5 6. The method according to claim 1, wherein a hardware device performs the operation on the memory, determines the type of the memory, and outputs the control signal.

7. The method according to claim 1, wherein the operation comprises an access operation.

10 8. A motherboard to automatically determine a type of a memory, used in a computer system that has a system power state signal, the motherboard comprising:

a hardware device , generating a control signal;

a memory module slot, accommodating a memory;

15 a voltage control circuit, coupled to the memory module slot to provide a configured operation voltage to the memory module slot; and

a recognition apparatus, coupled to the system power state signal, the control signal and the voltage control circuit; wherein

20 the voltage control circuit firstly outputs a preset voltage to the memory and then the hardware device outputs the control signal after performing an operation to determine a type of the memory; and

the recognition apparatus outputs a voltage adjustment signal after receiving the control signal and the system power state signal, so that the voltage control circuit outputs the configured operation voltage to the memory.

9. The motherboard according to claim 8, wherein the hardware device comprises

a central process unit executing a software program to generate the control signal.

10. The motherboard according to claim 8, wherein the voltage adjustment signal is configured as a high logic state when the system power state signal is a low logic state; the voltage adjustment signal is configured as a low logic state when the control signal to
5 be converted from the low logic state to the high logic state and the system power state signal is the high logic state; and the voltage adjustment signal otherwise remains a previous logic state.

11. The motherboard according to claim 10, wherein the recognition apparatus further comprises:

an inverter, having an input terminal and an output terminal, wherein the input terminal is coupled to the control signal; and

a D-flip-flop, comprising a data terminal, a clock terminal, a clear terminal, an inverted output terminal and a preset terminal, wherein the data terminal is coupled to the output terminal of the inverter, the clock terminal is coupled to the control signal, the clear terminal is coupled to the system power state signal, the inverted output terminal is coupled to the voltage adjustment signal, and the preset terminal is coupled to a specific voltage; wherein

when the clear terminal is the low logic state, the inverted output terminal is configured to the high logic state, when the clear terminal is the high logic state and the
20 clock terminal is converted from the low logic state to the high logic state the inverted output terminal is configured to the low logic state, and the inverted output terminal is otherwise maintained at the previous logic state.

12. The motherboard according to claim 11, wherein the D-flip-flop comprises an RS D-flip-flop.

13. The motherboard according to claim 8, wherein the operation comprises an access operation.